- Find $\frac{d}{dx}$'s:

| | | | | | |
|---|---|---|---|---|---|
| 0 $\sqrt{x}$ | $\frac{1}{2\sqrt{x}}$ | ① $\frac{x^{0-\frac{2}{3}}}{3}$ | $\sqrt[3]{x}$ | $\frac{1}{3x^{2/3}}$ | $\sqrt[4]{x}$ |
| $\sqrt{x^2}$ | $\lvert x \rvert$ | $\boxed{\frac{1}{3x^{2/3}}}$ | $\sqrt[3]{x^2}$ | $\frac{2}{3\sqrt[3]{x}}$ | $\sqrt[4]{x^2}$ |
| $\sqrt{x^3}$ | $\frac{3\sqrt{x}}{2}$ | $x^{\frac{1}{3}} = \sqrt[3]{x}$ | $\sqrt[3]{x^3}$ | 1 | $\sqrt[4]{x^3}$ |
| $\sqrt{x^4}$ | $2x$ | | $\sqrt[3]{x^4}$ | $\frac{4\sqrt[3]{x}}{3}$ | $\sqrt[4]{x^4}$ |
| $\sqrt{x^5}$ | $\frac{5x^{\frac{3}{2}}}{2}$ | $3\sqrt{x^2}$ | $\sqrt[3]{x^5}$ | $\frac{5x^{\frac{2}{3}}}{3}$ | $\sqrt[4]{x^5}$ |
| $\sqrt{x^6}$ | $3x^2$ | $\frac{\cancel{3}x^{\frac{2}{3}}}{\cancel{3}}$ | $\sqrt[3]{x^6}$ | $2x$ | $\sqrt[4]{x^6}$ |
| $\sqrt{x^7}$ | $\frac{7x^{\frac{5}{2}}}{2}$ | $\frac{d}{dx}(x) = \boxed{1}$ | $\sqrt[3]{x^7}$ | $\frac{7x^{\frac{4}{3}}}{3}$ | $\sqrt[4]{x^7}$ |
| $\sqrt{x^8}$ | $4x^3$ | $\sqrt[3]{x^6}$ | $\sqrt[3]{x^8}$ | $\frac{8x^{\frac{5}{3}}}{3}$ | $\sqrt[4]{x^8}$ |
| $\sqrt{x^{10}}$ | $5x^4$ | $6x^{\frac{5}{3}} = 2x^{\frac{5}{3}}$ | $\sqrt{x^{10}}$ | $\frac{10x^{\frac{7}{3}}}{3}$ | $\sqrt[4]{x^{10}}$ |

$\frac{\sqrt[4]{x}}{4}$

$\frac{x^{\frac{1}{4}}}{4}$

$\frac{x^{-\frac{3}{4}}}{4}$

C

$\sqrt{x^4}$

$\frac{4}{2}x = 2x$

Fraction

↓

simplify